REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1, 2, 4-11, 29-38 and 55-58 are pending. Claims 1, 6, 29, 31, 35, 55 and 57 are independent and hereby amended. No new matter has been added. It is submitted that these claims, as originally presented, were in full compliance with the requirements of 35 U.S.C. §112. Changes to claims are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. SUPPORT FOR AMENDMENT IN SPECIFICATION

Support for this amendment is provided throughout the Specification as originally filed and specifically at paragraph [0098] of Applicants' corresponding published application. By way of example and not limitation:

> [0098] FIG. 6 shows an example of configuration of a movement vector calculation unit 312 of the movement amount detection unit 31. This movement vector calculation unit 312 includes a blocking unit 3121 and a movement vector computation unit 3122, for example, as shown in FIG. 6. The movement vector calculation unit 312 divides the extracted flesh-color area into blocks to calculate a movement vector of the flesh-color area for each of the blocks. For example, **the face unit and the hand unit of the audience is a block, respectively, and then, block matching of an image with the next frame (or the previous frame) image is performed for each of the blocks. The movement direction and the movement amount when the images of the blocks are most**

Frommer Lawrence & Haug LLP
745 Fifth Avenue
New York, NY 10151
212-588-0800
Customer Number 20999

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> **matched with each other are movement vector MV.** Two-
> dimensional movement vector Mvi is detected, as shown in
> Formula (1).

III.   RESPONSE TO REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1, 2, 4, 5, 29-34 and 55-58 were rejected under 35 U.S.C. §103(a) as

allegedly unpatentable over U.S. Patent No. 6,289,110 to Kim (hereinafter, merely "Kim") in

view of U.S. Patent No. 7,266,771 to Tow (hereinafter, merely "Tow") and further in view of

U.S. Patent No. 5,907,361 to Okada (hereinafter, merely "Okada").

Claims 6-8 and 35-36 were rejected under 35 U.S.C. §103(a) as allegedly

unpatentable over Kim in view of Tow in view of U.S. Patent No. 7,373,209 to Tagawa

(hereinafter, merely "Tagawa") and further in view of Okada.

Claims 9, 10 and 37 were rejected under 35 U.S.C. §103(a) as allegedly

unpatentable over Kim in view of Tow in view of Tagawa in view of Okada and further in view

of U.S. Patent No. 5,550,928 to Lu (hereinafter, merely "Lu").

Claims 11 and 38 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable

over Kim in view of Tow in view of Tagawa in view of Okada and further in view of WO

91/03912 to Stevens (hereinafter, merely "Stevens").

Claim 1 recites, *inter alia*:

> ...**wherein the blocks include a face block representing a face
> unit of the audience and a hand block representing a hand unit
> of the audience, and block matching of a current image and a
> next or previous frame image is performed for each of the
> blocks,**
>
> **wherein the movement vector is the movement direction and
> the movement amount when a result of the block matching
> indicating images of the blocks are matched**... (Emphasis
> added)

Applicants submit that neither Kim nor Tow nor Okada, taken alone or in

combination, would disclose or render predictable the above-identified features of claim 1.

Specifically, none of the references used as a basis for rejection discloses or renders predictable

"wherein the blocks include a face block representing a face unit of the audience and a hand

block representing a hand unit of the audience, and block matching of a current image and a next

or previous frame image is performed for each of the blocks, wherein the movement vector is the

movement direction and the movement amount when a result of the block matching indicating

images of the blocks are matched," as recited in claim 1.

Specifically, the Office Action (see page 4) asserts that Kim teaches dividing the

extracted flesh-color area into blocks, and refers to Kim, Col.3, lines 14-45, Col.4, lines 50-65

and Col.5, lines 17-30, which are reproduced as follows:

> *Kim, Col.3, lines 14-45:*
> In a fifth step (S5) the color image frame and the difference image
> frame are ANDed, thus generating a logic image frame which has
> the color information and the motion change information of the
> object and then a grid image frame is generated by performing a
> grid process with respect to the logic image frame. Here, the grid
> process for the logic image frame reduces operation capacity and
> time compared with which the logic image frame is processed by
> the pixel. Specifically, the grid process divides the logic image
> frame into multiple grids, each has a fixed size, and compares a
> predetermined value with a value representing pixels of the grid,
> and expresses a value of the grid which is larger than the
> predetermined value as a binary grid image, thereby reducing the
> operation capacity and time to process the logic image frame.
>
> However, because each grid indicates a part of the object, the grids
> which are gathered may have a shape similar to the object. Thus, in
> a sixth step (S6) using direction connection information it is
> determined whether the grids are connected with other grids, and if
> connected, the grids are defined as a connected component and
> thus the logic image frame includes a plurality of connected
> components. In addition, in the sixth step (S6), minimum

rectangles each includes each of the connected components are obtained. Here, the minimum rectangles are defined as a variable RECT[i] wherein i is an integer number indicates a number of minimum rectangles. The minimum rectangle represents a candidate of a specific object to be extracted.

In a seventh step (S7), only each of the minimum rectangles, the candidates of the specific object and minimum rectangles satisfying conditions for the specific object. Here, the conditions which define the object are as follows.

Kim, Col.4, lines 50-65:
...Here, since the logic image frame is composed of pixel units, numerous computation processes are required to extract a shape of the face. Thus, the grid process is applied to obtain a grid image frame as shown in FIG. 7. Here, when the 8-direction connection information is applied to the grid image frame composed of grids which are dispersed therein, a connected component corresponding to an area of the face can be generated.

In FIG. 7, there are seven connected components, and FIG. 8 illustrates seven rectangles each defines a minimum area which includes each of the connected components. Here, when the minimum area is expressed as a variable RECT[i] wherein i indicates a number of minimum areas, the minimum areas are RECT[1], RECT[2], . . . , RECT[7]. Thus, the conditions of the specific object are compared with each of the minimum areas and the minimum area which satisfies the conditions thereof can be obtained.

Kim, Col.5, lines 17-30:
The minimum area RECT[3] which has the largest size among the remaining minimum areas is selected as the face area. In the variable RECT[3] of a minimum rectangle which includes connected components the density indicates a value of which the number of grids in a row or a column of one of the connected components is divided by a length of the row or the column thereof. Since, the minimum area RECT[3] is a rectangle, each row or column of the minimum area obtains its density and each density is compared with a threshold value of the density and the row or column of which density is smaller than the defined threshold value is deleted, thereby optimizing the minimum area to become the shape of the face.

Thus, Applicants submit that Kim fails to disclose or render predictable "wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks, wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched," as recited in claim 1.

Furthermore, this deficiency of Kim is not cured by the supplemental teaching of Okada or Tow or Tagawa.

Therefore, Applicants submit that independent claim 1 is patentable and respectfully request reconsideration and withdrawal of the rejection.

For reasons similar to, or somewhat similar to, those described above with regard to independent claim 1, independent claims 6, 29, 31, 35, 55 and 57 are also patentable, and Applicants thus respectfully request reconsideration of the rejections thereto.

IV.   DEPENDENT CLAIMS

The other claims in this application are each dependent from one of the independent claims discussed above and are therefore believed patentable for at least the same reasons. Applicants thereby respectfully request reconsideration and withdrawal of rejections thereto. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

Because Applicants maintain that all claims are allowable for at least the reasons presented hereinabove, in the interests of brevity, this response does not comment on each and every comment made by the Examiner in the Office Action. This should not be taken as acquiescence of the substance of those comments, and Applicants reserve the right to address such comments.

In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

In view of the foregoing amendments and remarks, it is believed that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By _____
Thomas F. Presson
Reg. No. 41,442
(212) 588-0800